SEQUENCE LISTING

<110>   ASTRAZENECA AB
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        Furlong, Stephen
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        Ravyn, Vipa
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<120>   GNAL Splice Variant and Uses Thereof

<130>   101218-1 WO

<150>   60/519,190
<151>   2003-11-11

<150>   60/607,010
<151>   2004-09-03

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            35   40   45

Ala Arg Thr Leu Leu Pro Arg Gly Gly Glu Gly Ser Pro Ala Cys Ala
        50   55   60

Arg Pro Lys Ala Asp Lys Pro Lys Glu Lys Arg Gln Arg Thr Glu Gln
65   70   75   80

Leu Ser Ala Glu Glu Arg Glu Ala Ala Lys Glu Arg Glu Ala Val Lys
                85   90   95

Glu Ala Arg Lys Val Ser Arg Gly Ile Asp Arg Met Leu Arg Asp Gln
            100   105   110

Lys Arg Asp Leu Gln Gln Thr His Arg Leu Leu Leu Gly Ala Gly
            115   120   125

Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile Leu His Val
    130   135   140

Asn Gly Phe Asn Pro Glu Glu Lys Lys Gln Lys Ile Leu Asp Ile Arg
145   150   155   160

Lys Asn Val Lys Asp Ala Ile Val Thr Ile Val Ser Ala Met Ser Thr
                165   170   175

Ile Ile Pro Pro Val Pro Leu Ala Asn Pro Glu Asn Gln Phe Arg Ser
            180   185   190

Asp Tyr Ile Lys Ser Ile Ala Pro Ile Thr Asp Phe Glu Tyr Ser Gln
            195   200   205

Glu Phe Phe Asp His Val Lys Lys Leu Trp Asp Asp Glu Gly Val Lys

                    210   215   220

Ala Cys Phe Glu Arg Ser Asn Glu Tyr Gln Leu Ile Asp Cys Ala Gln
225   230   235   240

Tyr Phe Leu Glu Arg Ile Asp Ser Val Ser Leu Val Asp Tyr Thr Pro
                245   250   255

Thr Asp Gln Asp Leu Leu Arg Cys Arg Val Leu Thr Ser Gly Ile Phe
                260   265   270

Glu Thr Arg Phe Gln Val Asp Lys Val Asn Phe His Met Phe Asp Val
            275   280   285

Gly Gly Gln Arg Asp Glu Arg Arg Lys Trp Ile Gln Cys Phe Asn Asp
    290   295   300

Val Thr Ala Ile Ile Tyr Val Ala Ala Cys Ser Ser Tyr Asn Met Val
305   310   315   320

Ile Arg Glu Asp Asn Asn Thr Asn Arg Leu Arg Glu Ser Leu Asp Leu
                325   330   335

Phe Glu Ser Ile Trp Asn Asn Arg Trp Leu Arg Thr Ile Ser Ile Ile
            340   345   350

Leu Phe Leu Asn Lys Gln Asp Met Leu Ala Glu Lys Val Leu Ala Gly
            355   360   365

Lys Ser Lys Ile Glu Asp Tyr Phe Pro Glu Tyr Ala Asn Tyr Thr Val
    370   375   380

Pro Glu Asp Ala Thr Pro Asp Ala Gly Glu Asp Pro Lys Val Thr Arg
385   390   395   400

Ala Lys Phe Phe Ile Arg Asp Leu Phe Leu Arg Ile Ser Thr Ala Thr
                405   410   415

Gly Asp Gly Lys His Tyr Cys Tyr Pro His Phe Thr Cys Ala Val Asp
            420   425   430

Thr Glu Asn Ile Arg Arg Val Phe Asn Asp Cys Arg Asp Ile Ile Gln
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            20                  25                  30

Gln Lys Glu Arg Leu Ala Tyr Lys Ala Thr His Arg Leu Leu Leu Leu
        35                  40                  45

Gly Ala Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile
    50                  55                  60

Leu His Val Asn Gly Phe Asn Pro Glu Glu Lys Lys Gln Lys Ile Leu
65                  70                  75                  80

Asp Ile Arg Lys Asn Val Lys Asp Ala Ile Val Thr Ile Val Ser Ala
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                    85                    90                    95

Met Ser Thr Ile Ile Pro Pro Val Pro Leu Ala Asn Pro Glu Asn Gln
            100             105             110

Phe Arg Ser Asp Tyr Ile Lys Ser Ile Ala Pro Ile Thr Asp Phe Glu
            115             120             125

Tyr Ser Gln Glu Phe Phe Asp His Val Lys Lys Leu Trp Asp Asp Glu
    130             135             140

Gly Val Lys Ala Cys Phe Glu Arg Ser Asn Glu Tyr Gln Leu Ile Asp
145             150             155             160

Cys Ala Gln Tyr Phe Leu Glu Arg Ile Asp Ser Val Ser Leu Val Asp
                165             170             175

Tyr Thr Pro Thr Asp Gln Asp Leu Leu Arg Cys Arg Val Leu Thr Ser
            180             185             190

Gly Ile Phe Glu Thr Arg Phe Gln Val Asp Lys Val Asn Phe His Met
        195             200             205

Phe Asp Val Gly Gly Gln Arg Asp Glu Arg Arg Lys Trp Ile Gln Cys
    210             215             220

Phe Asn Asp Val Thr Ala Ile Ile Tyr Val Ala Ala Cys Ser Ser Tyr
225             230             235             240

Asn Met Val Ile Arg Glu Asp Asn Asn Thr Asn Arg Leu Arg Glu Ser
                245             250             255

Leu Asp Leu Phe Glu Ser Ile Trp Asn Asn Arg Trp Leu Arg Thr Ile
            260             265             270

Ser Ile Ile Leu Phe Leu Asn Lys Gln Asp Met Leu Ala Glu Lys Val
    275             280             285

Leu Ala Gly Lys Ser Lys Ile Glu Asp Tyr Phe Pro Glu Tyr Ala Asn
    290             295             300

Tyr Thr Val Pro Glu Asp Ala Thr Pro Asp Ala Gly Glu Asp Pro Lys
305             310             315             320

Val Thr Arg Ala Lys Phe Phe Ile Arg Asp Leu Phe Leu Arg Ile Ser
                325             330             335

Thr Ala Thr Gly Asp Gly Lys His Tyr Cys Tyr Pro His Phe Thr Cys
            340             345             350

Ala Val Asp Thr Glu Asn Ile Arg Arg Val Phe Asn Asp Cys Arg Asp
    355             360             365
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Ser Ala Ala Pro Ala Pro Ala Ser Ile Pro Ala Pro Ala Pro Val Gly
            35              40              45

Thr Leu Leu Arg Arg Gly Gly Gly Arg Ile Val Ala Asn Ala Arg Pro
        50              55              60

Pro Gly Glu Leu Gln Ser Arg Arg Arg Gln Glu Gln Leu Arg Ala Glu
65              70              75              80

Glu Arg Glu Ala Ala Lys Glu Ala Arg Lys Val Ser Arg Gly Ile Asp
                85              90              95

Arg Met Leu Arg Glu Gln Lys Arg Asp Leu Gln Gln Thr His Arg Leu
            100             105             110

Leu Leu Leu Gly Ala Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln
        115             120             125

Met Arg Ile Leu His Val Asn Gly Phe Asn Pro Glu Glu Lys Lys Gln
    130             135             140

Lys Ile Leu Asp Ile Arg Lys Asn Val Lys Asp Ala Ile Val Thr Ile
145             150             155             160

Val Ser Ala Met Ser Thr Ile Ile Pro Pro Val Pro Leu Ala Asn Pro
                165             170             175
```

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Glu Asn Gln Phe Arg Ser Asp Tyr Ile Lys Ser Ile Ala Pro Ile Thr
            180             185             190
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Asp Phe Glu Tyr Ser Gln Glu Phe Phe Asp His Val Lys Lys Leu Trp
            195             200             205
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Asp Asp Glu Gly Val Lys Ala Cys Phe Glu Arg Ser Asn Glu Tyr Gln
    210             215             220
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Leu Ile Asp Cys Ala Gln
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<213> Homo sapiens

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            20                  25                  30


Gln Lys Glu Arg Leu Ala Tyr Lys Ala Thr His Arg Leu Leu Leu Leu
        35                  40                  45


Gly Ala Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile
    50                  55                  60


Leu His Val Asn Gly Phe Asn Pro Glu Glu Lys Lys Gln Lys Ile Leu
65                  70                  75                  80


Asp Ile Arg Lys Asn Val Lys Asp Ala Ile Val Thr Ile Val Ser Ala
                85                  90                  95


Met Ser Thr Ile Ile Pro Pro Val Pro Leu Ala Asn Pro Glu Asn Gln
                100                 105                 110


Phe Arg Ser Asp Tyr Ile Lys Ser Ile Ala Pro Ile Thr
            115                 120                 125
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            20                  25                  30


Asp Lys Gln Val Tyr Arg Ala Thr His Arg Leu Leu Leu Leu Gly Ala
        35                  40                  45


Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile Leu His
    50                  55                  60
```

Val Asn Gly Phe Asn Gly Glu Gly Gly Glu Glu Asp Pro Gln Ala Ala
65   70   75   80

Arg Ser Asn Ser Asp Gly Glu Lys Ala Thr Lys Val Gln Asp Ile Lys
                85   90   95

Asn Asn Leu Lys Glu Ala Ile Glu Thr Ile Val Ala Ala Met Ser Asn
            100   105   110

Leu Val Pro Pro Val Glu Leu Ala Asn Pro Glu Asn Gln Phe Arg Val
        115   120   125

Asp Tyr Ile Leu Ser Val Met Asn Val Pro
    130   135

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            20   25   30

Asp Asp Ser Ser Gly Asp Glu Ser Asp Asp Gly Thr Ser Gly Cys Leu
        35   40   45

Arg Trp Phe Gln His Arg Arg Asn Arg Arg Arg Lys Pro Gln Arg
    50   55   60

Asn Leu Leu Arg Asn Phe Leu Val Gln Ala Phe Gly Gly Cys Phe Gly
65   70   75   80

Arg Ser Glu Ser Pro Gln Pro Lys Ala Ser Arg Ser Leu Lys Val Lys
                85   90   95

Lys Val Pro Leu Ala Glu Lys Arg Arg Gln Met Arg Lys Glu Ala Leu
            100   105   110

Glu Lys Arg Ala Gln Lys Arg Ala Glu Lys Lys Arg Ser Lys Leu Ile
        115   120   125

Asp Lys Gln Leu Gln Asp Glu Lys Met Gly Tyr Met Cys Thr His Arg
    130   135   140

Leu Leu Leu Leu Gly Ala Gly Glu Ser Gly Lys Ser Thr Ile Val Lys
145   150   155   160

Gln Met Arg Ile Leu His Val Asn Gly Phe Asn Gly Glu Gly Gly Glu

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                165                    170                      175

Glu Asp Pro Gln Ala Ala Arg Ser Asn Ser Asp Gly Glu Lys Ala Thr
                180                   185                   190

Lys Val Gln Asp Ile Lys Asn Asn Leu Lys Glu Ala Ile Glu Thr Ile
                195                   200                   205

Val Ala Ala Met Ser Asn Leu Val Pro Pro Val Glu Leu Ala Asn Pro
    210                   215                   220

Glu Asn Gln Phe Arg Val Asp Tyr Ile Leu Ser Val Met Asn Val Pro
225                   230                   235                   240
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Met Gly Leu Cys Tyr Ser Leu Arg Pro Leu Leu Phe Gly Gly Pro Gly
1               5                   10                  15

Asp Asp Pro Cys Ala Ala Ser Glu Pro Pro Val Glu Asp Ala Gln Pro
                20                  25                  30

Ala Pro Ala Pro Ala Leu Ala Pro Val Arg Ala Ala Ala Arg Asp Thr
                35                  40                  45

Ala Arg Thr Leu Leu Pro Arg Gly Gly Glu Gly Ser Pro Ala Cys Ala
    50                  55                  60

Arg Pro Lys Ala Asp Lys Pro Lys Glu Lys Arg Gln Arg Thr Glu Gln
65                  70                  75                  80

Leu Ser Ala Glu Glu Arg Glu Ala Ala Lys Glu Arg Glu Ala Val Lys
                85                  90                  95

Glu Ala Arg Lys Val Ser Arg Gly Ile Asp Arg Met Leu Arg Asp Gln
                100                 105                 110

Lys Arg Asp Leu Gln Gln Thr His Arg Leu Leu Leu Leu Gly Ala Gly
                115                 120                 125

Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile Leu His Val
    130                 135                 140

Asn Gly Phe Asn Pro Glu Glu Lys Lys Gln Lys Ile Leu Asp Ile Arg
145                 150                 155                 160

Lys Asn Val Lys Asp Ala Ile Val Thr Ile Val Ser Ala Met Ser Thr
                165                 170                 175
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Ile Ile Pro Pro Val Pro Leu Ala Asn Pro Glu Asn Gln Phe Arg Ser
            180                 185                 190

Asp Tyr Ile Lys Ser Ile Ala Pro Ile Thr
            195                 200
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ctgactttag tatacaaaat attatccttc ttgtatgata ttgataaagt ttagctaata     180

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```
<210>  37
<211>  21
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Primer

<400>  37
gtttgacgat ggtgcttttc c                                    21


<210>  38
<211>  15
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Primer

<400>  38
gacgcaccgg ctcct                                           15


<210>  39
<211>  22
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Primer

<400>  39
gatggtgctt ttcccagact ca                                   22


<210>  40
<211>  15
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Primer

<400>  40
accagccccc aggag                                           15


<210>  41
<211>  15
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Primer

<400>  41
ccagccccga gcagc                                           15


<210>  42
<211>  73
<212>  PRT
<213>  Homo sapiens

<400>  42

Met Gly Cys Leu Gly Gly Asn Ser Lys Thr Thr Glu Asp Gln Gly Val
1               5                   10                  15
```

```
Asp Glu Lys Glu Arg Arg Glu Ala Asn Lys Lys Ile Glu Lys Gln Leu
         20              25                  30

Gln Lys Glu Arg Leu Ala Tyr Lys Ala Thr His Arg Leu Leu Leu Leu
         35              40                  45

Gly Ala Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile
    50              55                  60

Leu His Val Asn Gly Phe Asn Pro Glu
65                  70
```

<210> 43
<211> 71
<212> PRT
<213> Homo sapiens

<400> 43

```
Met Gly Cys Leu Gly Asn Ser Lys Thr Glu Asp Gln Arg Asn Glu Glu
1               5                   10                  15

Lys Ala Gln Arg Glu Ala Asn Lys Lys Ile Glu Lys Gln Leu Gln Lys
         20              25                  30

Asp Lys Gln Val Tyr Arg Ala Thr His Arg Leu Leu Leu Leu Gly Ala
         35              40                  45

Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile Leu His
    50              55                  60

Val Asn Gly Phe Asn Gly Glu
65                  70
```

<210> 44
<211> 150
<212> PRT
<213> Homo sapiens

<400> 44

```
Met Gly Leu Cys Tyr Ser Leu Arg Pro Leu Leu Phe Gly Gly Pro Gly
1               5                   10                  15

Asp Asp Pro Cys Ala Ala Ser Glu Pro Pro Val Glu Asp Ala Gln Pro
         20              25                  30

Ala Pro Ala Pro Ala Leu Ala Pro Val Arg Ala Ala Ala Arg Asp Thr
         35              40                  45

Ala Arg Thr Leu Leu Pro Arg Gly Gly Glu Gly Ser Pro Ala Cys Ala
    50              55                  60

Arg Pro Lys Ala Asp Lys Pro Lys Glu Lys Arg Gln Arg Thr Glu Gln
```

```
    65                        70                        75                        80
```

Leu Ser Ala Glu Glu Arg Glu Ala Ala Lys Glu Arg Glu Ala Val Lys
                    85   90   95

Glu Ala Arg Lys Val Ser Arg Gly Ile Asp Arg Met Leu Arg Asp Gln
                100   105   110

Lys Arg Asp Leu Gln Gln Thr His Arg Leu Leu Leu Leu Gly Ala Gly
                115   120   125

Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile Leu His Val
        130   135   140

Asn Gly Phe Asn Pro Glu
145   150

```
<210>   45
<211>   173
<212>   PRT
<213>   Homo sapiens

<400>   45
```

Thr Pro Arg Pro Thr Arg Ala Ser Ala Trp Arg Gly Lys Ser Glu Ser
1   5   10   15

Ser Arg Gly Arg Arg Val Tyr Tyr Asp Glu Gly Val Ala Ser Ser Asp
                20   25   30

Asp Asp Ser Ser Gly Asp Glu Ser Asp Asp Gly Thr Ser Gly Cys Leu
        35   40   45

Arg Trp Phe Gln His Arg Arg Asn Arg Arg Arg Lys Pro Gln Arg
        50   55   60

Asn Leu Leu Arg Asn Phe Leu Val Gln Ala Phe Gly Gly Cys Phe Gly
65   70   75   80

Arg Ser Glu Ser Pro Gln Pro Lys Ala Ser Arg Ser Leu Lys Val Lys
                85   90   95

Lys Val Pro Leu Ala Glu Lys Arg Arg Gln Met Arg Lys Glu Ala Leu
                100   105   110

Glu Lys Arg Ala Gln Lys Arg Ala Glu Lys Lys Arg Ser Lys Leu Ile
                115   120   125

Asp Lys Gln Leu Gln Asp Glu Lys Met Gly Tyr Met Cys Thr His Arg
        130   135   140

Leu Leu Leu Leu Gly Ala Gly Glu Ser Gly Lys Ser Thr Ile Val Lys
145   150   155   160

Gln Met Arg Ile Leu His Val Asn Gly Phe Asn Gly Glu
                165   170